## ABSTRACT OF THE DISCLOSURE

A multiband RF transmitting and receiving apparatus and a method therefore is capable of using a control voltage from a phase locked loop (PLL) to control other components, as well as a voltage controlled oscillator (VCO), of a multiband RF transceiver. The multiband transmitting and receiving apparatus adjusts a capacitance value of a varactor in a power amplifier (PA) and a low noise amplifier (LNA) including an LC parallel resonance circuit, respectively, using the control voltage from the PLL and controls a current flowing to a mixer. Accordingly, the components in the multiband RF transceiver are able to operate a greater number of frequency bands than a single frequency band, thereby reducing the number of components required to design the multiband RF transceiver.